

Claims

[c1] We claim as our invention:

1. A golf ball comprising:

a core; and

a cover formed over the core, the cover composed of a thermosetting polyurethane material formed from reactants comprising at least one polyurethane prepolymer and a curative blend comprising

4,4'-methylenebis-(2,6-diethyl)-aniline and a second curing agent selected from the group consisting of

N,N'-bis-alkyl-p-phenylenediamine,

N,N'-dialkylamino-diphenylmethane with tetrapropoxy-lated ethylenediamine and an aliphatic diamine;

wherein the cover has a thickness ranging from 0.010 inch to 0.044 inch.

[c2] 2. The golf ball according to claim 1 further comprising at least one boundary layer disposed between the core and the cover.

[c3] 3. The golf ball according to claim 1 wherein the polyurethane prepolymer is a polytetramethylene ether glycol terminated toluene diisocyanate prepolymer.

[c4] 4. The golf ball according to claim 2 wherein the boundary layer is composed of a blend of ionomers.

[c5] 5. The golf ball according to claim 1 wherein the polyurethane prepolymer is a polytetramethylene ether glycol terminated hexamethylene diisocyanate prepolymer.

[c6] 6. A golf ball comprising:
a core comprising a polybutadiene mixture;
a boundary layer formed over the core; and
a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising at least one polyurethane prepolymer and a curative blend comprising 4,4'-methylenebis-(2,6-diethyl)-aniline in an amount of 75 parts per one hundred parts of the curative blend and an aliphatic diamine in an amount of 25 parts per one hundred parts of the curative blend.

[c7] 7. A golf ball comprising:
a core comprising a polybutadiene mixture, the core having a diameter ranging from 1.35 inches to 1.64 inches and having a PGA compression ranging from 50 to 90;
a boundary layer formed over the core, the boundary layer composed of a blend of ionomer materials, the

boundary layer having a thickness ranging from 0.020 inch to 0.075 inch, the blend of ionomer materials having a Shore D hardness ranging from 50 to 75 as measured according to ASTM-D2240; and
a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising at least one polyurethane prepolymer and a curative comprising
4,4'-methylenebis-(2,6-diethyl)-aniline and a second curing agent selected from the group consisting of
N,N'-bis-alkyl-p-phenylenediamine,
N,N'-dialkylamino-diphenylmethane with tetrapropoxylated ethylenediamine and an aliphatic diamine, wherein the thermosetting polyurethane material has a Shore D hardness ranging from 30 to 60 as measured according to ASTM-D2240, and a thickness ranging from 0.010 inch to 0.044 inch.

- [c8] 8. A golf ball comprising:
a core comprising a polybutadiene mixture;
a boundary layer formed over the core; and
a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising at least one aliphatic polyurethane prepolymer and a curative blend comprising an aromatic curative in an amount of 10 to 90 parts

per one hundred parts of the curative blend and an aliphatic curative in an amount of 10 to 90 parts per one hundred parts of the curative blend.

- [c9] 9. The golf ball according to claim 8 wherein the thermosetting polyurethane material has a flexural modulus ranging from 10,000psi to 25,000psi when measured according to ASTM D790.
- [c10] 10. The golf ball according to claim 8 wherein the cover has a thickness ranging from 0.010 inch to 0.044 inch.
- [c11] 11. The golf ball according to claim 8 wherein the curative blend comprises an aromatic curative in an amount of 50 to 75 parts per one hundred parts of the curative blend and an aliphatic curative in an amount of 25 to 50 parts per one hundred parts of the curative blend.
- [c12] 12. A golf ball comprising:
 - a core comprising a polybutadiene mixture, the core having a diameter ranging from 1.35 inches to 1.64 inches and having a PGA compression ranging from 50 to 90;
 - a boundary layer formed over the core, the boundary layer composed of a blend of ionomer materials, the boundary layer having a thickness ranging from 0.020 inch to 0.075 inch, the blend of ionomer materials hav-

ing a Shore D hardness ranging from 50 to 75 as measured according to ASTM-D2240; and
a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising at least one aliphatic polyurethane prepolymer and a curative blend comprising an aromatic curative in an amount of 10 to 90 parts per one hundred parts of the curative blend and an aliphatic curative in an amount of 10 to 90 parts per one hundred parts of the curative blend, wherein the thermosetting polyurethane material has a Shore D hardness ranging from 30 to 60 as measured according to ASTM-D2240, and a thickness ranging from 0.010 inch to 0.044 inch.

- [c13] 13. A golf ball comprising:
a core comprising a polybutadiene mixture, the core having a diameter ranging from 1.35 inches to 1.64 inches and having a PGA compression ranging from 50 to 90;
a boundary layer formed over the core, the boundary layer composed of a blend of ionomer materials, the boundary layer having a thickness ranging from 0.020 inch to 0.075 inch, the blend of ionomer materials having a Shore D hardness ranging from 50 to 75 as measured according to ASTM-D2240; and

a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising at least one aromatic polyurethane prepolymer and a curative blend comprising an aromatic curative in an amount of 10 to 90 parts per one hundred parts of the curative blend and an aliphatic curative in an amount of 10 to 90 parts per one hundred parts of the curative blend, wherein the thermosetting polyurethane material has a Shore D hardness ranging from 30 to 60 as measured according to ASTM-D2240, and a thickness ranging from 0.010 inch to 0.044 inch.